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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,038	02/03/2004	Tae Won Lee	2080-3-225	3905
7590	12/04/2006			
			EXAMINER	
			KOSTAK, VICTOR R	
			ART UNIT	PAPER NUMBER
			2622	
DATE MAILED: 12/04/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/772,038	LEE, TAE WON	
	Examiner	Art Unit	
	Victor R. Kostak	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1, 4 and 8 is/are rejected.
- 7) Claim(s) 1-15 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 03 February 2004 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ . | 6) <input type="checkbox"/> Other: _____ . |

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1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. Note MPEP 606.01.

2. The drawings are objected to because referencing to input stage 100 in Fig. 2 is not in English.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Claims 1-15 are objected to because of the following informalities: in all three independent claims 1, 4 and 8, the recited feature "*an interpolator re-sampling ... into a frequency of a doubled symbol clock to interpolate*" appears misdescriptive. Interpolation seems

actually to be a *result* of a re-sampling operation (rather than the other way around); and the end phrase “*to interpolate*” seems incomplete in that there seems to be an object missing from the subject. (The ending phrase “*to interpolate*” may in fact not be necessary at all). Appropriate correction is required.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oh in view of Grabb et al.

Oh discloses a receiver for ATSC television signals (e.g. col. 1 lines 8-18) in which multipath (NTSC) signals are removed. Fig. 5 includes initial reception of the HDTV signal, and A/D convertor, with feedback from stage 306, recovers a baseband signal (col. 5 lines 51-53). Resampling of the symbol clock at twice its frequency results in an interpolated baseband signal (col. 5 lines 54-64), and a carrier recovery operation is done by stage 308 in response to fed back multipath data (NTSC interference detector 316), from which phase error is identified and the baseband signal is then compensated, and the reference carrier is accordingly generated. Downstream phase tracking also compensates for phase error which has not been removed by stage 308 (col. 6 lines 16-17).

Oh does not describe the signal format of the received HDTV signal. Nonetheless, since the format of such signal is a VSB signal standardized by the ATSC, it would typically include

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phase-related quadrature components, namely I and Q signals, as acknowledged by Grabb, who also discloses reception and decoding of VSB video signals (col. 4 lines 15-25). In view of this, it would have been obvious to one of ordinary skill in the art to arrange the receiver of Oh in a manner to accordingly accommodate the I and Q components in the decoding process, thereby meeting claim 1.

As for claims 4 and 8, Oh also discloses symbol synchronization recovery using stage 312 which also involves the multipath signal detection data obtained by stage 316 (col. 5 lines 47-50 and lines 59-64). The same reason for obviousness given for accommodating standard I and Q signal components in addressing claim 1 applies to claims 4 and 8.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Claims 2, 3, 5-7 and 9-15 appear allowable over the prior art.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor R. Kostak whose telephone number is (571) 272-7348. The examiner can normally be reached on Monday - Friday from 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, Virginia 22313-1450

Or faxed to:

(571) 273-8300

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office whose telephone number is (703) 308-HELP.

L.R.K.

Victor R. Kostak
Primary Examiner
Art Unit 2622

VRK